



# MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956



Ministry of  
Education  
Government of India



MoE's  
INNOVATION CELL  
(GOVERNMENT OF INDIA)



INSTITUTION'S  
INNOVATION  
COUNCIL  
(Ministry of Education Initiative)



## Institution's Innovation Repository

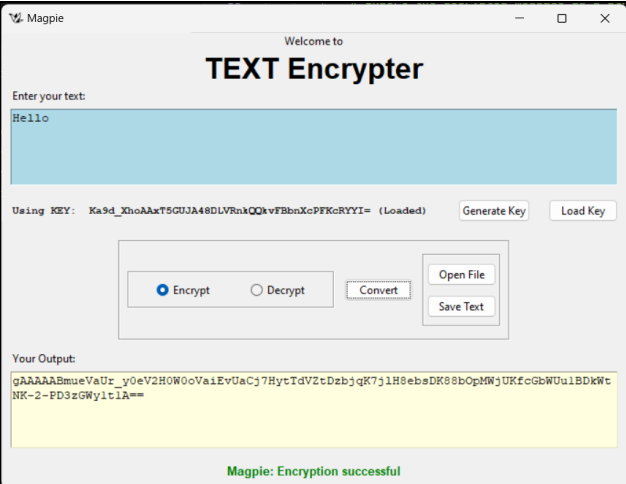
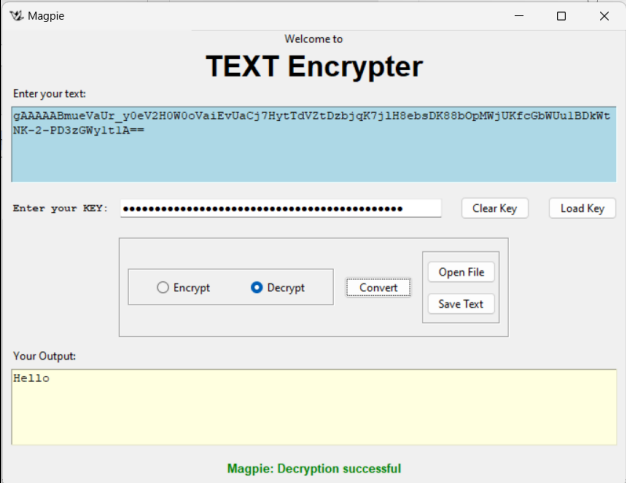
Idea/Proof of Concept (PoC)&Innovation/Prototype

### Submission Form

S.NO	Field Name	Description
1	*Title	MAGPIE: A DEMONSTRATION OF SYMMETRIC ENCRYPTION
2	*Developed as part of	-Academic Requirement/ Study Project
3	*Choose the Financial Year, during the Idea- PoC/ Innovation Developed	2023-2024
4	*Sector/Domain	<ul style="list-style-type: none"><li>Cryptography and Security</li></ul>

5	*Innovation Type	-Product
6	*Development Stage - Technology Maturity of the Solution/Innovation in terms of Technology Readiness Level TRL	TRL 3 : Applied research. First laboratory tests completed; proof of concept
<b><u>If TRL 3 and below: Exclude 7, 8, 9, 21, 22, 23, 24</u></b>		
7	*Development Stage - Technology Maturity of the Solution/Innovation in terms of Technology Readiness Level TRL	
8	Development Stage - Manufacturing Maturity of the Solution/ Innovation in terms of Manufacturing Readiness Level	
9	Development Stage: Investment Readiness Level of the Solution/Innovation (IRL)	
10	*Define the problem and its relevance to today's market /society/ industry need.	In an era where digital communication is prevalent, securing sensitive information is crucial. Magpie addresses this need by providing a Python-based application that demonstrates essential cryptographic techniques, including encryption and hashing, to secure text messages. This project is relevant as it educates users on fundamental information security principles, which are increasingly vital in protecting data against unauthorized access and cyber threats in today's market, society, and industries.
11	*Describe the Solution/ Proposed / Developed	The solution utilizes symmetric encryption techniques along with SHA-256 hashing to secure text messages, ensuring both confidentiality and data integrity. The project is unique in its combination of a command-line interface (CLI) and a graphical user interface (GUI), catering to different user preferences and skill levels. Its educational focus, with integrated tutorials and clear documentation, makes it a valuable tool for learning about cryptography and information security. The project's dual-interface approach and emphasis on practical, hands-on learning distinguish it as both a functional application and a teaching resource.

12	<b>*Explain the uniqueness and distinctive features of the (product/ process/ service) solution.</b>	Our symmetric encryption tool differentiates itself by combining a user-friendly CLI and GUI with robust encryption algorithms, ensuring both ease of use and strong security. Unlike competitors, our solution provides seamless key management, real-time feedback on encryption and decryption processes, and cross-platform compatibility. The integration of Rich for CLI and Tkinter for GUI offers a unique blend of aesthetic appeal and functionality, making encryption accessible even to non-technical users. This balance of security, usability, and visual appeal sets our tool apart from similar products in the market.
13	<b>*How your proposed / developed (product / process/service)solution is different from similar kind of product by the Competitors if any</b>	The solution incorporates innovative elements like seamless key management and the unique integration of CLI and GUI components, which could be considered for IP protection. However, the underlying cryptographic algorithms, such as those used for symmetric encryption, are typically based on established standards and are not patentable. If the implementation introduces a novel approach to encryption or key management, it may have potential for patenting. A thorough analysis of the solution's unique features would be necessary to determine any patentable components. Consulting with a patent attorney would be the next step to explore IP protection.
14	<b>*Is there any IP or Patentable Component associated with the Solution?</b>	NO
15	<b>*Has the Solution Received any Innovation Grant/Seed fund Support?</b>	NO
16	<b>*Are there any Recognitions (National/International) Obtained by the Solution?</b>	NO
17	<b>*Is the Solution Commercialized either through Technology Transfer or Enterprise Development/Start-up?</b>	NO
18	<b>*Had the Solution Received any Pre-Incubation /Incubation Support?</b>	NO
19	<b>Video URL</b>	<a href="https://youtu.be/XKndCmaZxbE">https://youtu.be/XKndCmaZxbE</a>

20	Upload Photograph:(JPG, PNG max 2 MB)	 
21	<b>*Utility: Highlight the utility/value proposition (key benefits) aspects of the solution/innovation*</b>	
22	<b>*Scalability: Highlight the market potential aspects of the Solution/Innovation (Potential Market Size, segmentation and Target users/customers etc.)</b>	
23	<b>*Economic Sustainability: Highlight commercialization/business application aspects of the solution (how it is going to economic profitable and viable)</b>	
24	<b>*Environmental Sustainability: Highlight environmental friendliness aspects and related benefit Of the solution/innovation</b>	

**NOTE: Once your Idea/PoC is submitted, then Team leader can add Team Members and Mentor details.**

**GUIDE**

**PROJECT CO-ORDINATOR**

**HOD**